

## **If They Build It, They Will Learn Utilizing STEM to Create Exceptional Learning Opportunities**

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**<http://integration-station.weebly.com>**  
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Every week it seems as though they are adding a new letter to STEM! “A” for Art (S.T.E.A.M.) or “R” for Reading/Research/wRiting (S.T.R.E.A.M.). According to Dr. Sam Houston, President and CEO of the NC Science, Mathematics, and Technology Education Center, “S.T.E.M. is more than an acronym for Science, Technology, Engineering and Mathematics. They are Strategies that Engage Minds.”

### **Writing Across the Curriculum**

One-Pagers	Advertisements	Autobiographies/Biographies
Blogs	Exit Tickets	Make a Web
Design a Book Cover	Draw a picture and label it	Definitions in your own words
Create examples of the skill/concept and explain	Write about a real-life use of the concepts or skills	Reflections
Pencil Talks	Learning Logs	Bumper Stickers
Brochures	Cartoons	Catalogs
Number Stretches	Comics	Journals
Open Responses	Recording Different Strategies	Claims, Evidence, and Response (CER)
Anchor Charts	Posters	Vocabulary Books
Instruction Manuals	Letters	Observations
Plays	Quizzes	Speeches
Fact Sheets	Games	How-to Articles
Create word Problems	Surveys	Stories
Summaries	Tweets	Timelines
Want ads	Songs	Reviews
Documentation for center/station activities	Frayer Model	Scripts/Storyboards
Student created task cards	Paper Slides	R.A.F.T.

### **Chalk Talk**

Looking at the topic or question written on the chart paper:

- What ideas come to mind when you consider this idea, question, or problem?
- What connections can you make to others' responses?
- What questions arise as you think about the ideas and consider the responses and comments of others?

### **The Power of LEGOs**

<b><u>Math</u></b>	<b><u>Literacy</u></b>	<b><u>Engineering</u></b>
Building arrays	Illustrate a Historical Story	City Planning Challenge
Multiplication and Division	Fractured Fairy Tales	Computerless Coding Project
Area and Perimeter	Multimedia Storytelling Project (iMovie and Stopmotion Animation)	LEGO WeDO or Mindstorm Coding and Robotics
Volume	Demonstrate Speaking and Listening Skills	Balloon Car
Fractions	Elements of a Story (Characters, Plot and Setting)	Design a new toy
Counting	Following Directions	Make a catapult
Exponents	Create a story, commercial, newscast, or comic strip.	Simple Machines
Part-Part Whole	LEGO Apps	Forces and Motion
Subtraction and Addition	Argumentation – have students build based on a concept and talk about the different representations	<a href="http://www.legoengineering.com">http://www.legoengineering.com</a>
Patterns	Write high frequency words on them and use them to create sentences.	Chemical Reaction Powered Cars (LEGOs + Alka Seltzer + Water + Film Canister)
Symmetry	LEGO StoryStarter	LEGO Earthquake. Can you build a city that will withstand an earthquake? (Build the tallest building possible that can withstand an earthquake...shaking the LEGO base plate back and forth. ☺)

LEGOs are expensive so how do I get them?

- Rent them. <http://www.pley.com> - Receive your first set free then \$15/month.
- Write a proposal on <http://www.donorschoose.org> or <http://www.adoptaclassroom.org>
- Look for used LEGOs on Craigslist, Ebay, or Secondhand stores.

### **Visual Thinking Strategies – VTS Facilitation Method 101**

<http://www.vtshome.org/what-is-vts/method-curriculum--2>

**Teachers are asked to use three open-ended questions:**

- What's going on in this picture?
- What do you see that makes you say that?
- What more can we find?

**Students are asked to:**

- Look carefully at works of art
- Talk about what they observe
- Back up their ideas with evidence
- Listen to and consider the views of others
- Discuss many interpretations